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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte CHIH-CHIA CHEN
and MARK SHANE PENG

Appeal 2015-005116
Application 13/004,617
Technology Center 2800

Before ROMULO H. DELMENDO, KAREN M. HASTINGS, and MICHAEL G. McMANUS, *Administrative Patent Judges*.

HASTINGS, *Administrative Patent Judge.*

DECISION ON APPEAL

Appellants[1] appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 1–20 under 35 U.S.C. § 103(a) over at least the basic combination of Chang et al., (US 2008/0018319, published Jan. 24, 2008; hereinafter "Chang") and Djakovic (US 6,351,359 issued Feb. 26, 2002).[2] We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

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[1] Taiwan Semiconductor Manufacturing Company, Ltd. is stated to be the real party in interest (Br. 2).

[2] The Examiner applied additionally Williams et al., (US 7,317,256 B2, issued Jan. 8, 2008; hereinafter "Williams"), to claims 3, 4 and 11-20 (Final

We AFFIRM.

Claim 1 is representative of the claimed invention (emphasis added):

1. An apparatus, comprising:

a first integrated circuit die having a first bandgap reference circuit comprising temperature compensated circuitry with a first non-zero temperature drift coefficient, the temperature compensated circuitry comprising a proportional to absolute temperature circuit element, the first bandgap reference circuit outputting the first output reference signal with a first temperature drift coefficient and based on signals generated by the proportional to absolute temperature circuit element and by the complimentary to absolute temperature circuit element;

a second integrated circuit die having a second bandgap reference circuit comprising temperature compensated circuitry with a second non-zero temperature drift coefficient of the first bandgap reference circuit, the temperature compensated circuitry comprising a proportional to absolute temperature circuit element and a complementary to absolute temperature circuit element, the second bandgap reference circuit outputting a second output reference signal with a second temperature drift coefficient approximately equal to and of opposite polarity to the first temperature drift coefficient, the second output reference signal based on signals generated by the proportional to absolute temperature circuit element and by the complementary to absolute temperature circuit element;

an adder circuit disposed on at least one of the first and second integrated circuit dies for combining the first and second output reference signals, and outputting a combined reference signal that is temperature compensated by the combined offset between the first and second temperature drift coefficients; and

connectors for connecting the first and second output reference signals to the adder circuit.

Action 4). Appellants rely upon the arguments for claim 1 for all the claims (Br. 12-15).

Appellants rely upon the arguments for claim 1 for all the claims, including those separately rejected (Br. 8-15).

ANALYSIS

Upon consideration of the evidence on this record and each of Appellants' contentions, we find that the preponderance of evidence on this record supports the Examiner's conclusion that the subject matter of Appellants' independent claim 1 is unpatentable over the applied prior art. We sustain the Examiner's 103(a) rejections based on the findings of fact, conclusions of law, and rebuttals to arguments expressed by the Examiner in the Answer.

We add the following for emphasis.

Appellants' principal argument is that the Examiner used impermissible hindsight to combine the teaching of Djakovic pertaining to the advantages of having circuits on separate chips to Chang's Fig. 4 circuit as proposed by the Examiner (Br. 10, 11). This is not persuasive of error. As pointed out by the Examiner, and contrary to Appellants' position, Chang does not specify that his band-gap reference circuit must be on the same chip; rather, Chang states that in many circuits a band-gap reference circuit is generally built in (Ans. 2; Chang ¶ 25).

Appellants' argument is viewed as a statement that Chang teaches away from splitting up the band-gap reference circuit. Whether the prior art teaches away from the claimed invention is a question of fact, *In re Harris*, 409 F.3d 1339, 1341 (Fed. Cir. 2005). It is well established that a prior art reference must be considered in its entirety, i.e., as a whole, when determining if it would lead one of ordinary skill in the art away from the

claimed invention. *W.L. Gore & Assoc, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1550 (Fed. Cir. 1983). *See Syntex (U.S.A.) LLC v. Apotex, Inc.*, 407 F.3d 1371, 1379-80 (Fed. Cir. 2005) ("A statement that a particular combination is not a preferred embodiment does not teach away absent clear discouragement of that combination.").

The Examiner's de facto position that the artisan of ordinary skill would weigh the advantages and disadvantages of splitting the Fig. 4 circuit of Chang onto different dies based on Djakovic's teaching is reasonable (Ans. 3, 4). "The fact that the motivating benefit comes at the expense of another benefit, however, should not nullify its use as a basis to modify the disclosure of one reference with the teachings of another. Instead, the benefits, both lost and gained, should be weighed against one another." *Winner Int'l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n. 8 (Fed. Cir. 2000).

Appellants further contend that even if the combination of Chang with Djakovic was proper, each of the first and second dies would not include the claimed circuitry because Chang's circuits 410 and 420 do not each include a proportional to absolute temperature circuit element and a complementary to absolute temperature circuit element as recited in claim 1 (Br. 11, merely pointing out what claim 1 recites and asserting Chang does not have these features). Appellants have not however sufficiently explained why the Examiner's position that each of the circuits 410 and 420 as shown in Chang's Fig. 4 do indeed include the appropriate components as recited is in error (*e.g.,* Ans. 3 (explaining that the claim language encompasses the PMOS transistors and bipolar transistors in each of 410 and 420; Final Act. 2, 3; *see also* Ans. 2 stating no specific method or structure is recited to

distinguish over Chang's disclosure[3]). *Cf. In re Lovin*, 652 F.3d 1349, 1357 (Fed. Cir. 2011) ("[W]e hold that the Board reasonably interpreted Rule 41.37 to require more substantive arguments in an appeal brief than a mere recitation of the claim elements and a naked assertion that the corresponding elements were not found in the prior art. Because Lovin did not provide such arguments, the Board did not err in refusing to separately address claims 2–15, 17–24, and 31–34.")

Appellants have not directed our attention to any persuasive reasoning or credible evidence to establish that the Examiner's interpretation that the claim language encompasses Chang's circuit is unreasonable, nor to special definitions in the Specification that would establish that Chang's circuits 410 and 420 do not encompasses the claimed first and second circuits as recited in claim 1. *In re ICON Health & Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007) (in construing claims, "the PTO must give claims their broadest reasonable construction consistent with the specification. . . . Therefore, we look to the specification to see if it provides a definition for claim terms, but otherwise apply a broad interpretation.")

Furthermore, under the flexible inquiry set forth by the Supreme Court, the PTO must take account of the "inferences and creative steps," or even routine steps, that an ordinary artisan would employ. *Ball Aerosol and Specialty Container, Inc. v. Limited Brands, Inc.*, 555 F.3d 984, 993 (Fed. Cir. 2009). It is well settled that a reference stands for all of the specific

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[3] Appellants' remarks directed to Spec ¶¶ 24, 25, 30 regarding temperature drift coefficient and that there is no need to trim bandgap references in their invention, does not adequately explain why the Examiner's position is in error.

teachings thereof as well as the inferences one of ordinary skill in this art would have reasonably been expected to draw therefrom. *See In re Fritch*, 972 F.2d 1260, 1264-65 (Fed. Cir. 1992).

In light of these principles and the tenets of claim interpretation, a preponderance of the evidence supports the Examiner's rejections of the claims. "A person of ordinary skill is also a person of ordinary creativity, not an automaton." *KSR*, 550 U.S. at 421.

The decision of the Examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED